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INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)

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|   | George H. Lowell et al. | ·               |
|   | FILING DATE             | GROUP ART UNIT  |
|   | November 13, 2003       | 1645            |

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| NMM                          | AA 2002/0176863 A1 |                                  | 11/28/02  | Dal                          | Dale          |      | 184.1      |                      |                |
|                              | AB                 | 2002/0086023 A1                  | 07/04/02  | Dal                          | e             | 424  | 178.1      |                      |                |
|                              | AC 2003/0143245 A1 |                                  | 07/31/03  | Red                          | ldish et al.  | 424  | 190.1      |                      |                |
|                              | AD                 | 2003/0157122 A1                  | 08/21/03  | Dal                          | е             | 424  | 190.1      |                      |                |
|                              | AE                 | AE 2005/0042230 A1 02/2          |           | An                           | derson et al. | 424  | 186.1      |                      | _              |
|                              | AF                 | 2005/0063988 A1                  | 03/24/05  | Dal                          | e             | 424  | 190.1      |                      |                |
|                              | AG 2005/0152919 A1 |                                  | 07/14/05  | Wa                           | Ward et al.   |      | 212.1      |                      |                |
|                              | АН                 | 2005/0202037 A1                  | 09/15/05  | Dal                          | e             | 424  | 190.1      |                      |                |
|                              | AI 4,454,121       |                                  | 06/12/84  | Bea                          | Beachey       |      | 177        |                      |                |
|                              | AJ                 | 4,521,334                        | 06/04/85  | Bea                          | chey          | 260  | 112.5 .    |                      |                |
|                              | AK                 | 4,597,967                        | 07/01/86  | Bea                          | chey          | 424  | 88         |                      |                |
|                              | AL                 | 4,695,562                        | 09/22/87  | Bea                          | chey et al.   | 514  | 13         |                      |                |
|                              | АМ                 | 4,705,684                        | 11/10/87  | Bea                          | chey          | 424  | 88         |                      |                |
|                              | AN                 | 4,728,639                        | 03/01/88  | Bea                          | chey          | 514  | 12         |                      |                |
|                              | АО                 | 4,919,930                        | 04/24/90  | Bea                          | chey et al.   | 424  | 88         | <u> </u>             |                |
|                              | АР                 | 5,124,153                        | 06/23/92  | Bea                          | chey et al.   | 424  | 93P        |                      |                |
|                              | AQ                 | 5,162,226                        | 11/10/92  | Bea                          | chey et al.   | 435  | 252.3      |                      |                |
| $\underline{\hspace{0.1cm}}$ | AR                 | 5,985,284                        | 11/16/99  | Lov                          | vell          | 424  | 234.1      |                      |                |
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| U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  |  |   |                                     |          |              |              | ATTY. DOCKET NO. APPLICATION NO. 484112.413 10/706,275 |   |         |          |              |        |             |
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|  |  |   | 06/04 Dale                          |          |              |              | 424 244  |   | 244.1   |          |              |        |             |
| NMM  | ВВ   | 6,7   | 743,900 B2                          | 06/      | 01/04        | Bu           | rt e   | et al.  | 530 414 |          | 414          |        |             |
| FOREIGN PATENT DOCUMENTS   |  |   |                                     |          |              |              |  | _   |         |          |              |        |             |
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| MMM  | вс   | E   | P 0 305 279 A1                      |          | 03/01/8      | 9            | ЕP   | 0   |         |          |              |        |             |
|  | BD   | W   | O 98/01558 A2                       |          | 01/15/9      | 8            | PC   | T   |         |          |              |        |             |
|  | BE   | WO 99/13084 A1  |                                     |          | 03/18/9      | 9            | PC   | T   |         |          |              |        |             |
|  | BF   | WO 00/37648 A1  |                                     |          | 06/29/0      | 0            | PC   | T   |         |          |              |        |             |
|  | BG   | G WO 00/40729 A1  |                                     |          | 07/13/00 PCT |              |  |   |         |          |              |        |             |
|  | вн   | WO 01/60402 A2  |                                     |          | 08/23/0      | 08/23/01 PCT |  |   |         |          |              |        |             |
|  | ВІ   | WO 02/057315 A2   |                                     |          | 07/25/0      | 2            | PCT  |   |         |          |              |        |             |
|  | BJ   | вл WO 03/065973 A2  |                                     |          | 08/14/0      | /14/03 PCT   |  |   |         |          |              |        |             |
|  | BK   | WO 2004/098636 A2   |                                     |          | 11/18/0      | 4            | PCT  |   |         |          |              |        |             |
|  | BL   | . WO 2005/007189 A1   |                                     |          | 01/27/0      | 5            | PC   | T   |         |          |              |        |             |
|  | ВМ   | W   | O 2005/027964 A                     | 11       | 03/31/0      | 5            | PC   | T   |         |          |              |        |             |
| V  | BN   | W   | O 2005/042017 A                     | \1       | 05/12/0      | 5            | PC   | T   |         |          |              |        |             |
|  |  | ,   |                                     |          |              |              |  | Author, Title, Date, Pertinent Pag                |         |          |              | ,      |             |
| имм  | во   |   |                                     |          |              | _            |  | ip A streptococcal M pr<br>l of Immunology, 148(3 |         |          |              |        |             |
| NMM  | BP Cartwright, K., "Group A streptococcal infections in humans," Journal of Applied Microbiology   |   |                                     |          |              |              |  |   |         |          |              |        |             |
| 241747   |  | -   | Symposium, 83(S                     |          |              |              |  |   | ranto   | 2022     | ue nuocara   | in mi  |             |
| )DO:   | ВQ   |   |                                     |          |              |              |  | une response against St                           |         |          |              |        |             |
| NMM  |  | after intranasal vaccination with Fibrone Diseases, 179(4):901-906, April 1999. |                                     |          |              |              |  |   | Siui,   | 1710     | e sournai oj | mjecn  | Ous         |
| EXAMINE  | R  | /N  | Diseases, 179(4):  . M. Minnifield/ |          |              |              |  | DATE CONSIDERED                                   |         |          |              |        |             |
| * EXAMINI  | * EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in |   |                                     |          |              |              |  |   |         |          |              |        |             |
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| PATENT AND TRADEMARK OFFICE  |  |   |  |   |             |                        | 484112.413 10/706,275                               |                |                     |                    |                            |             |  |  |
| INFORMATION DISCLOSURE STATEMENT   |  |   |  |   |             |                        | APPLICANTS  |                |                     |                    |                            |             |  |  |
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|  |  | сс  | • •  | -   |             |                        | and characterization of a                           | _              |                     |                    |                            |             |  |  |
| N  | MM   |   | transporter with n   | ıulti <sub>!</sub>  | ple specii  | ficity                 | for metal cations," Mole                            | cular i        | Mici                | robiology, 3       | 4(3):59                    | 4(3):596-   |  |  |
|  |  | 606, 1999.  |  |   |             |                        |   |                |                     |                    |                            |             |  |  |
|  |  | CD  | I'V 1 (i) 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |   |             |                        |   |                |                     |                    |                            |             |  |  |
|  |  | of mice by group A Streptococcus," Infection and Immunity, 65(6):2080-2087, June  Johnsson, E. et al, "Role of hypervariable region in streptococcal M proteins: Bindir human complement inhibitor," The Journal of Immunology, 161(9):4894-4901, 199 |  |   |             |                        |   |                |                     |                    |                            |             |  |  |
|  |  |   |  |   |             |                        |   |                |                     |                    |                            |             |  |  |
|  |  |   |  |   |             |                        |   |                |                     |                    |                            | 1           |  |  |
|  | <u> </u>   |   |  |   |             |                        |   |                |                     |                    |                            |             |  |  |
|  |  | CF  | Kehoe, M. A. et a  | l., "I  | Horizonta   | ıl ger                 | ne transfer among group A                           | A strep        | toco                | occi: implic       | ations 1                   | for         |  |  |
|  |  | 10  |  | pathogenesis and epidemiology," Trends in Microbiology, 4(11):436-443, November |             |                        |   |                |                     |                    |                            |             |  |  |
|  | 130  | co  |  | -   |             |                        | nd hydrophobic foot vacci                           | _              |                     |                    |                            |             |  |  |
| $\neg \omega$  | immunogenicity of malaria, trypanosome, and streptococcal peptides without added           |   |  |   |             |                        |   |                | <del>d adju</del> v | ants,"             |                            |             |  |  |
| Lowell, G. H. et al., "Proteosome and hydrophobic foot vaccines provide enhanced- immunogenicity of malaria, trypanosome, and streptococcal peptides without added adjuva  Technological Advances in Vaccine Development, (L. Lasky Ed., Alan R. Liss, N.) pp. 423 |  |   |  |   |             |                        |   |                |                     |                    |                            |             |  |  |
| 1988   |  |   |  |   |             |                        |   |                |                     |                    |                            |             |  |  |
|  |  | <u></u>   | <del></del>  | al "  | Identific   | ation                  | of T-cell autoepitopes th                           | at cros        | ss-re               | act with the       | C- ter                     | C- terminal |  |  |
|  |  | СН  | •  |   |             |                        | A streptococci," Internation                        |                |                     |                    |                            |             |  |  |
|  |  |   | -  | prot  | ciii di git | oup A                  | 4 sueptococci, imernant                             | mui 11         | /11/14              | morogy, oto        | 1).1233                    | 1277,       |  |  |
|  |  |   | 1994.  | ÷1 44   | T1          |                        | i C   | . idar         | ; <b>6</b> : ~      | ntion of a se      |                            | .d          |  |  |
|  |  | CI  |  | -   |             |                        | ccine for rheumatic fever                           |                |                     |                    |                            |             |  |  |
|  | target epitope on M protein of group A streptococci," The Lancet, 344:639-642, September 3 |   |  |   |             |                        |   |                |                     |                    |                            | er 3,       |  |  |
|  |  |   | 1994.  |   |             |                        |   |                |                     |                    |                            |             |  |  |
| _  |  | CJ  | Robinson, J. H. and Kehoe, M. A., "Group A streptococcal M proteins: virulence factors and |   |             |                        |   |                |                     |                    |                            |             |  |  |
| 1  | <b>V</b> ∣   | protective antigens," Immunology Today, 13(9):362-367, 1992.  |  |   |             |                        |   |                |                     |                    |                            |             |  |  |
|  |  | СК  |  |   |             | <u>ov</u>              |   |                |                     |                    |                            | -           |  |  |
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